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SOME REMARKS ON THE CLARITY REQUIREMENT AND THE CONCEPT OF LINGUISTIC ANALYSIS

Clarity is probably the most basic requirement laid down by logic in its broadest sense. As far as I know, however, the concept has not received any in-depth analysis, although the requirement has been repeated on various occasions. Such an analysis is not the purpose of these remarks either: their goal will be achieved if the concept of clarity and the associated notion of linguistic analysis become at least slightly clearer than they are now.

I should add that in this article I will only be concerned with the issue of clarity of declarative statements, i.e. sentences, without touching on the problem of clarity of other utterances — normative, evaluative, or interrogative. As for the concept and various types of linguistic analysis, illustrative examples will be drawn from works in the field of logical semiotics, where various kinds of analysis occur in the most lucid way.

Varieties of the clarity requirement

It seems quite natural to treat the clarity requirement as a directive of rational linguistic behaviour. Accordingly, formulating clear (comprehensible, informative) utterances would be a condition for rational linguistic behaviour. Such a description, however, is too vague, since in order to determine whether a given action is rational, it is necessary to set a goal (a value) to be achieved by this action (Simon 1957: 242). In a given situation, performing an action with respect to one goal may be rational, while carrying out the same action

in the same circumstances but with respect to a different goal might be irrational.

It seems that the goal of all actually formulated declarative statements is to inform someone about something — whether it is someone specific, anyone, or the speaker herself. In some cases, the aim of the communication may be the ultimate goal, the goal pursued by the author of the statement, but it may also be instrumental in relation to some other purpose. In the latter case the author might want the statement to have a cognitive value. Since the cognitive value is only assigned to assertions which can be socially controlled, it is necessary that a statement aspiring to cognitive value should be communicable. In a special case, this cognitive value of a claim can rest on the fact that it is a theorem of science, so that the problem to which this claim responds is regarded — within a given paradigm of science — as a scientific issue.

Since clarity of a statement is necessary for achieving the communicative and thereby the cognitive goal, and in the special case — a scientific one, the following rules can be considered directives of rational linguistic behaviour:

(1) to inform someone about something, one should make statements which are clear to this person;

(2) to formulate a statement with a cognitive value, one should express it clearly;

(3) to formulate a statement which is a scientific theorem, one should express it clearly.

The idea expressed in requirement (1) is simple: a person who has a communicative intention, wants the hearer to experience a particular belief; if the speaker formulates an unclear statement, she will make the realization of this intention difficult or impossible. It is evident, therefore, that uttering unclear statements cannot be regarded as a rational behaviour if the aim of the speaker is to inform the addressee about something by means of those utterances.

Given that the communicative goal of an utterance is, as we have said, instrumentally subordinated to the cognitive aim, the above justification of requirement (1) can be repeated with respect to requirement (2). The requirement of clarity in the latter version has been assumed e.g. by Jan Łukasiewicz who judged unclear sentences to be cognitively worthless. He demanded that all philosophical problems which cannot be given a clear resolution should

be rejected as metaphysical (Łukasiewicz 1928). By contrast, issues taken up by philosophers which can be formulated clearly, comprehensibly (and which include — according to Łukasiewicz — problems of determinism, causation, and teleology) can be considered as having a cognitive value; they can even be granted the status of scientific problems — they will be solved once the solutions have been proved in specially constructed axiomatic systems (Łukasiewicz 1970).

A less radical position concerning the status of unclear utterances was taken by Kazimierz Twardowski. His position roughly amounts to requirement (3). Twardowski observed that some philosophical problems are formulated so vaguely that it is virtually impossible to set them out in a lucid way. Even so, it does not follow that these problems, as well as the doctrines which provide solutions to them, lack cognitive value. Still, those obscurely formulated questions and philosophical claims do not belong to the set of scientific questions and assertions — they have a cognitive value but lie outside the field of science. Perhaps in the course of further development of knowledge it will become possible to determine the point of those claims or even to solve them (Łuszczewska-Romahnowa 1968: 160).

Thus the difference between Twardowski's and Łukasiewicz's positions could be summarized in the following way: for the former, statements which cannot be formulated clearly do not belong to science — they do not deserve to be called scientific; for the latter, not only do they fall short of being scientific, but they also lack any cognitive value. It is clear then that Twardowski accepted version (3) of the clarity requirement , while Łukasiewicz assumed version (2).

The concept of clarity and obscurity of statements

On the face of it, the concept of clarity is a psychological notion. I will try to show, however, that such an account leads to consequences that are incompatible with the intuitions we have when we say that certain statements are clear or unclear.

Let us try to explicate the psychological notion of clarity. To this end, it is necessary to make use of a psychologically understood concept of informing. Namely, we will say that an utterance U *informs* a person Y at a moment t that p if and only if (1) Y thought at t that p and (2) the fact that Y receives U is a necessary component of a sufficient condition[1] for the fact

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[1]If A_1 and A_2, and ..., and A_{k-1}, and A_k, and A_{k+1}, and ..., and A_n constitute a sufficient condition of B, then A_k is a *necessary component of a sufficient condition*

that Y thought at t that p. Accordingly, the definition of the concept of clarity runs as follows: a sentence S formulated by a person X is CLEAR to a person Y at t if and only if X formulated S in order for the hearer (either a concrete one, e.g. Y, or an arbitrary one) to think that p, and if the sentence S actually informs Y at t that p.

It seems that this definition is prone to a variety of objections. First, the concept of clarity is usually understood in such a way that it is possible to attribute clarity (or the lack thereof) to statements contained in a text written by many authors who need not share one communicative intent (e.g. members of opposite parliamentary factions intentionally propose to formulate a document — to be enacted by the whole parliament — in such a way that important divergences are hidden behind generalities). Yet the above definition fails to encompass such cases. This suggests that common intuitions concerning the concept of clarity do not involve communicative intents of the author of a statement which is deemed lucid or unclear. Second, the definition is open to doubt even if we limit it to statements of a single author who is actually experiencing a communicative intention. The reason is that in numerous situations we are unable to determine the author's real intention. Yet, despite these often unsurmountable difficulties with figuring out other people's intentions, we usually feel free to regard a given statement as clear or unclear. It is possible because the assessment of clarity depends not on the author's intention but on whether we consider a given statement as comprehensible to competent users of the language in which the statement was formulated. It is quite another thing whether the utterance is adequate with respect to the communicative intents of its author. Third, it might happen that a person who thinks that p utters an extremely obscure statement which is impossible to understand even for a charitable and competent interpreter, yet the hearer has thought that p due to utterly accidental associations. The statement could hardly be considered clear — a verdict which is at odds with the definition in question.

The drawbacks listed above stem from the fact that the definition is based on the concept of communicative purpose and on the psychologically understood notion of informing. As a result, whether an utterance turns out to be clear for someone depends on a variety of incidental — from a linguistic point of view — properties of the hearer (receiver), such as intelligence, ability to focus, memory, etc. The same statement will be perfectly clear to

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for B if and only if A_1 and A_2, and ..., and A_{k-1}, and A_{k+1}, and ..., and A_n are not a sufficient condition of B.This description takes its cue from the definition given by Kotarbiński (1965: 15).

a more intelligent person and obscure to a less intelligent one. Yet we would like to understand the concept of clarity in such a way that statements of the same form and with the same meaning are either both lucid or both obscure.

The above difficulties can be solved by introducing the concept of a rational linguistic subject who is supposed to be a 'perfect logician', that is, someone who is able to apply all logical rules of inference, who accepts all logical tautologies, rejects all counter-tautologies, and in addition, is a perfectly competent speaker of a given language, i.e. can apply all rules of this language. In constructing such an ideal type of linguistic subject, we can use the concept of grasping a linguistic utterance which is independent from accidental circumstances of an extralinguistic nature. It is so, because the concept of the hearer has been 'normalized', unified.

In order to explicate the concept of clarity it will be necessary to clarify yet another term, namely: "the sentence (...) says that: (— — —)". The ordinary sense of this term seems to require that "(...)" should be substituted with names of declarative sentences and "(— — —)" — with names of propositions. For instance, in the expression "The sentence őIt snowsŕ says that it snows" the written mark "It snows" put in internal quotation marks is a name of a declarative statement (sentence), while the written mark following the expression "says" is a name of a proposition. The proposition can be described as a type (set) of synonymous sentences (Church 1956: 4f). So the sentence S says that p insofar as p is a type (set) of sentences synonymous with S. Such a description implies that if a sentence S_1 says that p, while S_2 says that q, where S_2 is a nonequivalent consequence of S_1, then it is not the case that S_1 says that q.

We are now in a position to accept the following definition:

A sentence S of a language L is CLEAR with respect to L and a system of knowledge K if and only if a rational subject of L, acquainted with K, is able to indicate propositions $p_1, p_2, ..., p_k$ $(k \geqslant 1)$ such that she will accept that S says that p_1 or that S says that p_2, or ..., or that S says that p_k.

A sentence S of a language L is OBSCURE with respect to L and a system of knowledge K if and only if a rational subject of L, acquainted with K, is unable to indicate any set of propositions $p_1, p_2, ..., p_k$ such that she would accept that: S says that p_1 or that S says that p_2, or ..., or that S says that p_k $(k \geqslant 1)$.

Such a description entails that a rational linguistic subject is not capable of determining what an obscure statement says in a given language. It does not mean, however, that such a subject is unable to specify what the vague

statement is about, i.e. which objects it describes. Of course, even this might be impossible in extreme cases of obscurity.

The pair of concepts "obscure statement — clear statement" can be contrasted with another opposition — "univocal statement — ambiguous statement." A statement is univocal if a rational linguistic subject will insist that it expresses exactly one proposition, and it is ambiguous if the subject can decide that the statement expresses multiple alternative propositions. Plainly, a lucid statement can be both univocal and ambiguous, insofar as the propositions involved are clearly stated.

Legitimacy of the clarity requirement

Let us consider whether the requirements listed above are plausible. The legitimacy of requirement (1) is uncontroversial — it is obvious that formulating clear statements facilitates achieving the communicative goal. It is also worth noting that requirement (1) is by no means synonymous with the simplicity requirement: *speak in such a way that every person with some minimum knowledge* (e.g. a secondary-school knowledge[2]) *could understand you.* For if we were to take the simplicity requirement literally, and without qualifications as to the scope of its application, we would be forced to refrain from mathematical discussions in professional circles as incomprehensible for laymen... By contrast, requirement (1) is relativized to a circle of addressees the speaker wishes to inform. So if the speaker wants to inform an undergraduate, then — in accordance with requirement (1) — she should formulate her statements in such a way that they are clear based on the knowledge covered by the secondary-school curriculum. Yet if she is going to inform a highly skilled specialist, she need not assume any restrictions as to the technical terms she employs, the knowledge of the addressee, etc.

Requirement (2) is fundamentally wrong insofar as the term "cognitive value" is taken in its usual sense according to which heuristic means, leading to proper discoveries, also have a cognitive value. Historians of science often emphasize that:

> "things are more or less discovered, not discovered outright from complete obscurity to complete revelation. One step consists in acquiring the idea of a principle; another, if not several others, in giving a precise form to that idea and driving it far enough

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[2]Such a requirement was put forward by Twardowski (Kotarbiński 1959: 3).

to be able to make it a starting point for further researches."
(Hadamard 1954: 145)

It would be a huge simplification to deny any value to ideas which gave rise to important scientific discoveries only because those ideas were stated in an insufficiently lucid way. Thus it seems wrong to regard claims of traditional philosophy as cognitively worthless (pointless) only because they are unclear. A different perspective on a given issue, explicating it by means of a new conceptual apparatus, might bring out important and interesting themes. In general, the following principle seems plausible: "if a given statement appears to be unclear, assume that it is clear while it is you who failed to understand it properly; only after numerous genuine attempts at understanding have failed, should you assume that it is unclear." Admittedly, the principle takes away the satisfaction usually derived from ridiculing incomprehensible ideas, but in return it offers a chance that one will not overlook important, albeit vaguely stated, views.

As for requirement (3), it is worth noting that it may be treated as a quasi-definition of the concept of science and thereby as an expression of terminological decision according to which the label "scientific" can be attributed to a claim only if it has been stated clearly. In fact, science is understood nowadays as a system of intersubjectively expressible claims, that is to say, roughly, statements which are clear in the sense assumed in this article.

On the concept of linguistic analysis

By "analysis of a linguistic expression" one usually understands the process of clarifying the meaning of this expression, resulting in a claim that the expression in question means such and such thing. Yet the goal of linguistic analysis is not only to provide a semantic equivalent of the *analysandum*, but also to provide an equivalent that would require no further analysis, that is — a *clear* one. An operation which consists in providing a synonymous expression regarded by the analyzing person as unclear could hardly be counted as analysis. That being said, the analyzing person can be mistaken and provide an *analysans* which seems clear to her but which is actually obscure.

Since the aim of an analysis of an expression is to define the sense of this expression, the analyzing person assumes a fixed language — let us call it the language of analysis — in which she is supposed to render the *analysandum*. She will consider her analysis adequate not when she believes

that she understands the expression but only after she is able to translate the analyzed expression into the language of analysis. For instance, for some logicians, the only clear theorems are those which can be translated into the language of mathematical logic, set theory, or a discipline of comparable degrees of precision; any claim which fails to be expressible in such languages is discarded as 'muddle-headedness', 'metaphysics', etc.

The above remarks prompt the following definition of the concept of linguistic analysis: a person X carries out an ANALYSIS of an expression A of a language L in a language L' and with respect to knowledge K if and only if (1) X claims that the meaning of an expression A' (of L') in L' is the same as the meaning of an expression A in L, and (2) X claims that the expression A' is clear in L' with respect to K.

If by adequacy of an analysis we understand the truth of a claim which is the result of the analysis, we can say that an analysis is adequate when the analyzing person proposes as an *analysans* an expression which has the same meaning as the *analysandum* and which is clear with respect to the assumed knowledge.[3]

Descriptive and reconstructive analysis

We can distinguish several types of linguistic analyses depending on which kind of language of analysis has been employed. The criterion distinguishing various types of analysis from this perspective consists in the restrictions imposed on the language in which the analysis is performed. Roughly speaking, in the field of logical semiotics — where various sorts of analysis occur most clearly — three types of analysis are used:

I. An ordinary language is used as the language of analysis.

II. An artificial but not formalized language is used as the language of analysis.

III. A formalized language is used as the language of analysis.

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[3]A certain remark leaps to mind concerning the so called paradox of analysis: "If the verbal expression representing

the *analysandum* has the same meaning as the expression representing the *analysans*, the analysis states a bare identity and is trivial; but if the two verbal expressions do not have the same meaning, the analysis is incorrect" (Langford 1942: 323). Namely, given the concept of analysis proposed in my paper, it is true that an analysis is inadequate if there is no synonymy between *analysandum* and *analysans*. It is not true, however, that an analysis is automatically correct (and thereby trivial) if the synonymy holds: in addition, the *analysans* must be clear.

By invoking the terminology introduced by Janina Kotarbińska (1964: 22), the analysis of type I can be called descriptive and the two remaining ones — reconstructive, while type II is explicative and type III — formal.[4]

An instructive example of descriptive analysis has been given by Maria Ossowska (1932) who analyzes the concept of expressing. The analysis consists in a meticulous differentiation between semantic varieties of the term "expressing." The author distinguishes four main meanings of the phrase "A sentence S expresses a thought T" which can be found in natural language. For instance, let us show how she analyzes the first version of this phrase, according to which expressing consists in representing thoughts: a thought should be connected with the relevant statement by some similarity. The author distinguishes three criteria that can applied in order to determine whether such a similarity occurs or not. Thus she considers the structural similarity of written marks or sounds constituting the sentence to psychological representations of those marks or sounds; she also discusses a material criterion: identity of the content of the sentence and the content of thought; finally, she analyzes a mixed criterion which requires that the two previous conditions are met. If we accepted the first criterion, we should admit that the sentence "Socrates and Alcibiades had a picnic on the bank" would express both the thought that they had a picnic on the river bank, and the thought that they had a picnic on the roof of a certain building. Ossowska raises similar objections against the second criterion and concludes that the common intuitions are best preserved by the third, mixed criterion.

Note that the sense of the term "expressing" is clarified by means of terms drawn from ordinary language. The only condition, if any, is that they should be as unambiguous as possible. The language of descriptive analysis is the ordinary language; its choice can be justified in various ways: by appealing to practical reasons — that it is the most universally known, most communicative language, etc. — or to epistemological reasons.

Descriptive analysis can be contrasted with reconstructive analysis. The person who performs an analysis of this type imposes certain restrictions on the language she is using. If she is going to analyze a term, she assumes a set of terms in the language of analysis which are not interdefinable and uses them to explicate the term in question. If she intends to analyze the sense of a claim, she tries to construct, in the language of analysis, a sentence which is a translation of this claim. In any case, what is important is that not all clarifications of the analyzed expression will be regarded as

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[4]This threefold division is inspired by the typology put forward by Witold Marciszewski (1962: 266f).

equally good. A satisfactory clarification must be formulated by means of the expressions assumed as basic or initial. Thus, from the point of view of the reconstructive analysis, it is unacceptable to use whichever ordinary-language term happens to be useful at any given moment of the explication. Such an implausible procedure is common in the works of philosophers representing the so called linguistic philosophy. For instance, R. M. Hare (1952: 118f), in analyzing the concept of good, points to the difference between the intrinsic and instrumental goodness, distinguishes descriptive components of the sense of the phrase "*a* is good," and finally arrives at the conclusion that various uses of the word "good" share the element of *commending* and the whole normative, nondescriptive sense of the word "good" boils down to this concept. Yet the notion of commending itself has not been subject to semantic analysis — it was just taken from the ordinary language.

The reconstructive analysis can be performed in a more or less formal manner; it can be carried out in a more formalized language by constructing it from scratch, or by using some already existing formal language; the analysis can also be more 'relaxed', providing a translation of the analyzed expression into an artificial language which is more precise and orderly than the ordinary language but still falls short of being a formalized language.

Let us begin with this 'explicative' type of analysis. A good example are the works of Kazimierz Ajdukiewicz in the field of epistemology. For instance Ajdukiewicz (1978b) analyzes the thesis of objective idealism in Rickert's formulation: "a statement is true if and only if it is dictated by transcendental norms." The analyzed language — according to Ajdukiewicz — is the language of Rickert's ontology and the language of analysis is the language of semantics. As a translation of Rickert's claim, Ajdukiewicz formulates the following equivalence: "in the language of natural science a statement is true if and only if it is dictated by the rules of direct consequence specific to that language, i.e. if it is a theorem of that language" (Ajdukiewicz 1978b: 150). Since the language of semantics used by Ajdukiewicz is not a formalized language, the analysis of Rickert's thesis cannot be regarded as a formal analysis. It is, however, an explicative analysis: although the language of analysis is not a natural language it is still an artificial, albeit not formalized, language.

As an example of formal analysis consider the analysis of pragmatic notions carried out by R. M. Martin (1959: 14f). The author constructs a language of pragmatics as a formalized language by defining in it ordinary pragmatic terms: assertion, utterance, subjective intension, etc. Martin begins by specifying the object language — the simplified theory of types T.

Then he constructs a semantic metalanguage of the theory of types, SM^T, which — apart from the syntactic metalanguage for T and the translation of T — contains semantic claims stating that a given metalinguistic expression signifies the corresponding expression from T. Next, on top of the semantic metalanguage, Martin builds a pragmatic metalanguage PM^T which contains — apart from terms and formulas from SM^T — new kinds of expressions: temporal variables and variables running over the set of men. In addition, in PM^T there is also a new primitive term: "X accepts a at time t," axiomatically characterized. Based on these preliminary assumptions, Martin defines several other pragmatic notions — subjective intension, understanding, uttering, etc.

It seems that each of the types of linguistic analysis described above has its advantages and disadvantages. The undeniable benefit of descriptive analysis is that a person employing this kind of analysis is free to deal with new problems that can be expressed in ordinary language but may be inexpressible in a more precise, albeit poorer, language. Still, the way of solving or even formulating the problems may be unsatisfactory. In order for those problems to be formulated and solved in a precise way, we must use a conceptual apparatus associated with some artificial language, either formalized or not.

The three ways of carrying out linguistic analysis need not be mutually exclusive. In fact, there is a good deal to indicate that they can, and should, complement each other. Namely, many semiotic problems can only be formulated — at first — in a sufficiently rich, albeit not very precise, ordinary language. More precise languages available at a given time might be too poor to express those problems adequately. This allows room for reconstructive analysis. Since it is rarely the case that imprecise intuitions are immediately expressible in formalized languages, the first step of their clarification is the explicative analysis. It is only at the subsequent stage of semiotic research that systems of axiomatic semiotics are constructed.

Accordingly, the view that reconstructive analysis fails to contribute anything relevant in comparison with descriptive analysis is equally implausible as the view that all cognitively valuable problems can be solved in the framework of artificial languages.

Historical and systematic analysis

Before we move on to further issues connected with the concept of linguistic analysis, a few words should be said about the assumption of

rationality of the author of an analyzed text, which is made in the course of analysis.

The point is that in analyzing any statements we adopt several assumptions concerning the author of those statements. We assume, for instance, that she does not accept two contradictory sentences at the same time; that if she accepts a sentence, then she accepts its logical consequences; that she accepts logical tautologies, etc. Hence, we tacitly presuppose a theory of rational linguistic behaviour (in the case of linguistic analysis of a text composed of declarative sentence — a theory of rational acceptance), and in the course of the analysis we put forward a hypothesis that the author of the analyzed text is rational, i.e. she satisfies the requirements of that theory of rational linguistic behaviour. Since theories of rational linguistic behaviour are special kinds of model theories, the rationality assumption plays a role analogous to the assumption about the applicability of a model physical theory (Nowak 1970).

We will now distinguish two types of linguistic analysis which assume the rationality assumption, but in each case the assumption is treated by the analyzing person in a completely different way. On the one hand, we are talking about historical analysis which is performed by someone whose purpose is to establish the author's intention in formulating such and such statements, in other words, someone who puts forward a hypothesis that by formulating the analyzed statement the author had in mind the content of the *analysans.* On the other hand, historical analysis should be distinguished from systematic analysis whose goal is not to determine the author's intention but to find out whether her statements can be understood in such a way that they serve as answers to questions posed by the analyzing person.

An example of systematic analysis is given by Ajdukiewicz's (1978a) analysis of the associationist theory of meaning. It is enough to juxtapose the associationist definitions of meaning with the ones given by Ajdukiewicz, which were supposed to be explications of the associationist theory of meaning, to realize that he neglected the historical aspect of the problem — whether Stanisław Szober, whose accounts are discussed in that paper, really envisaged the modifications of the associationist definition of meaning put forward by Ajdukiewicz. Ajdukiewicz introduces, for instance, a relativization to a language and to a capacity to use the language — in accordance with his own conviction that they are needed in defining semantic concepts. Thereby he adopts a number of assumptions forming the basis for those relativizations — according to Ajdukiewicz a person speaks in a given language if and only if she utters sounds envisaged by its syntax while being disposed to such

and such reactions in response to these sounds. Thus he assumes a theory of motivational connections, which are determined by the meaning rules (directives) of a given language and thereby he presupposes his directival theory of meaning. Naturally, it was not Ajdukiewicz's intention to attribute all of this to Szober or to any other associationist. He just wanted — on the basis of assumptions he himself considered relevant — to reconstruct the associationist theory of meaning so as to make it as interesting as possible from a purely theoretical point of view. In other words, he wished to make the most of its theoretical possibilities in order to figure out whether this theory, in its optimal form, contributes something important to the issue at hand — to the definition of meaning.

The difference between systematic and historical analysis can be clarified by appealing to the place of the rationality assumption in both analyses. Namely, the person carrying out the historical assumption treats the rationality assumption as a hypothesis, which — like any other hypothesis — must be tested and in the case of its refutation — rejected as a falsehood. By contrast, in the systematic analysis we treat the rationality assumption as a quasi-hypothetical assumption: there is no point in testing it, since it is not our task to determine whether the author is rational — we only want to establish what the author would claim if she were rational and if she endorsed our assumptions. It can be said, therefore, that the systematic analysis is based on counterfactual reasoning and the rationality assumption does not serve as an empirical hypothesis but as an *a priori* presumption which is left untested. The author of the analyzed text is treated not as a concrete person but as a purely instrumental construct; he is treated like the lawgiver by lawyers (Nowak 1968, chap. 8) or like the author of a literary work by a literary critic (Kmita, Nowak 1968, chap. 3). Systematic analysis involves "interpretations in which we set aside the actual mental state of the author of the text and we treat the text as an autonomous item with its own, objective significance" (Marciszewski 1968: 4).

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